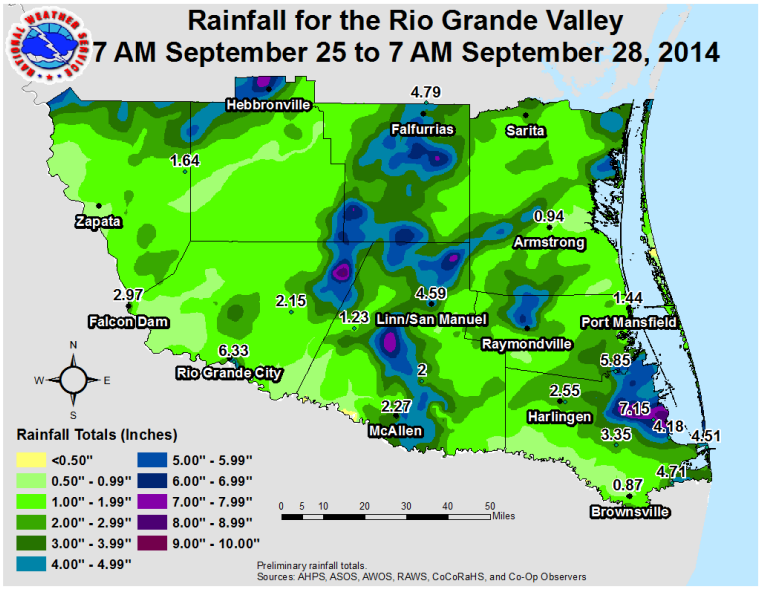
National Weather Service
Brownsville/Rio Grande Valley

A "Wet-Tember", Indeed!

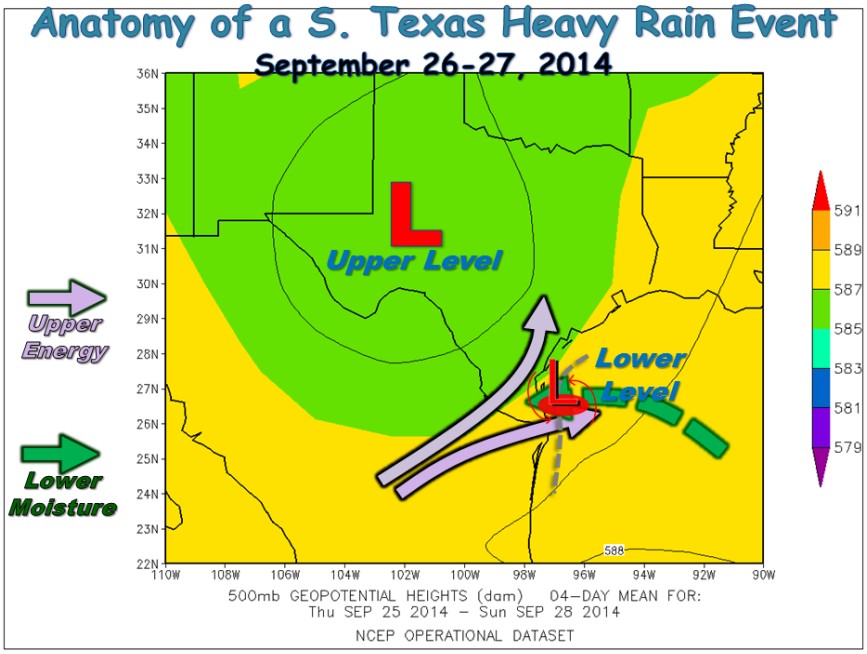


Left: Arroyo Los Olmos running out of its banks near Rio Grande City on Saturday, September 27, 2014. Right: Measured and estimated rainfall for September 25-28, 2014.

We're working on an episode summary of the multiple flash/urban flood events this past weekend, which started Friday evening in Rio Grande City with a swollen Arroyo Los Olmos under 6 to 8 inches of rainfall, then resumed Saturday afternoon with a quick 2-4" up the Spine of Hidalgo County (McAllen/Edinburg/Linn-San Manuel), and concluded Saturday night with a day/evening total estimated between 8 and 10 inches along SR 106 east of Rio Hondo in Cameron. Not to mention the 4+ inches that fell on South Padre and made a mess of anyone's beach plans last Saturday.

What Happened Last Weekend?

A slow moving upper level disturbance centered in west and central Texas during the period enhanced low pressure and moisture "convergence" in the Gulf and along the coast between the 25th and 27th. The heavy rainfall affected the Coastal Bend each day, and finally cranked in a big way from SPI through areas east of US 77 and north of "Beach Highway" SR 100 on Saturday. Across mid and upper Valley, energy from the disturbance collided with boundaries from the morning activity Friday (aided by just enough heating) to produce a persistent band of very heavy rainfall in southern Starr County Friday evening. That same energy helped spark a separate line of storms on Saturday which focused on Hidalgo County. At the same time Hidalgo was getting slammed, rainfall was piling up in eastern Cameron County, and an evening round of 4 to 6 additional inches (perhaps 8 inches over Laguna Madre Bay) flooded areas from the La Tina

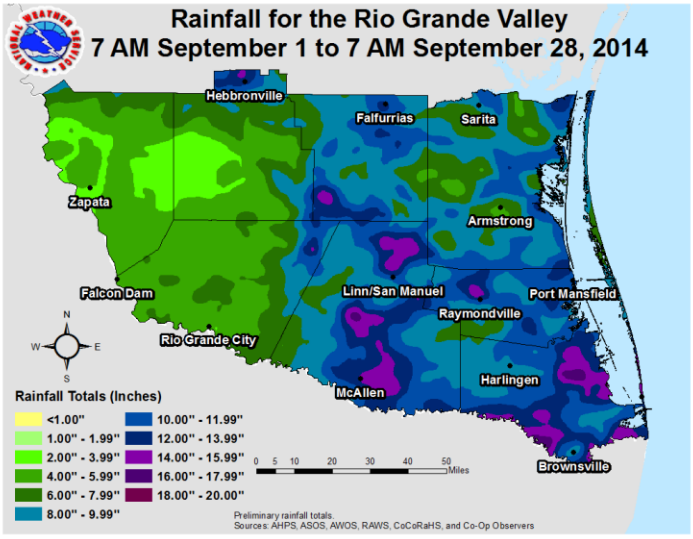


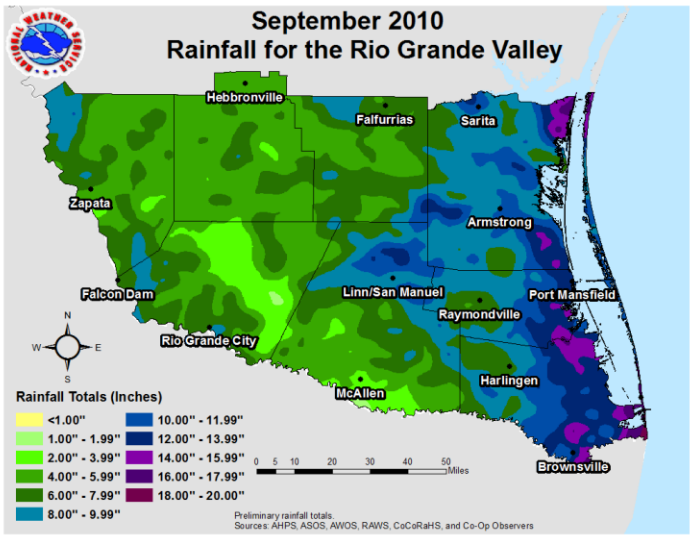
Ranch to Holly Beach and the Laguna Atascosa National Wildlife Refuge.

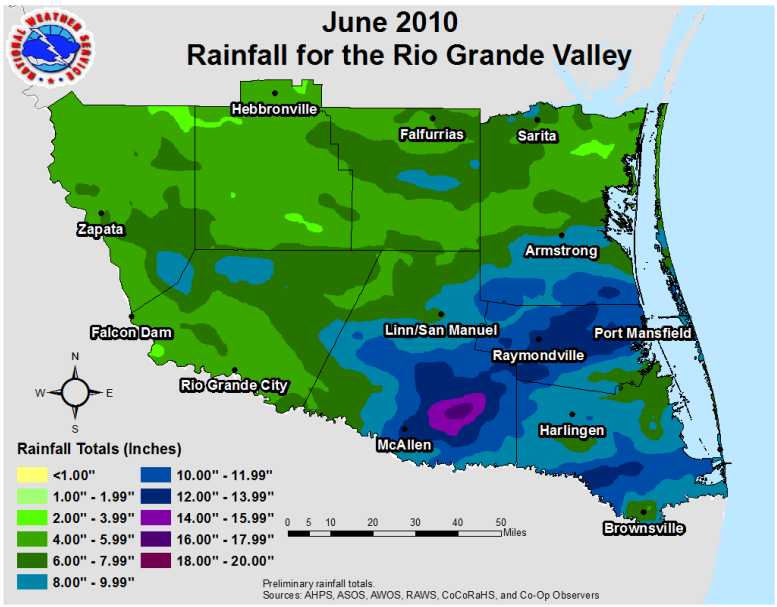
Time to Build an Ark?

September is the wet season in the Valley, with 4 1/2 to 6 inches of rainfall, generally (highest near the coast). So far (and we're seeing another final round today), we've more than doubled that and in some cases tripled the average. For the statistics buffs in the group, September 2014 not only blows away the most recent "Wet"-tember (2010), for the RGV (Starr/Hidalgo/Cameron/Willacy) area overall, but has now overtaken June 2010 as the wettest single month since...you guessed it... **July, 2008**, when drought-denting early month rains combined with ***Hurricane Dolly*** to leave 15 to 25 inches across the region.

Bottom line? We have seen this kinda thing here since...six years and two months ago! The following charts show the September comparisons side-by-side; the prior wettest month, post-Dolly, was June 2010, shown below.







9 Stations with 132 Reports over 28 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-HDL-34	Mission 3.1 NE	9.41	2.69	12.10
TX-HDL-9	Mission 1.9 ENE	11.09		11.09
TX-HDL-19	Mission 4.3 WSW	9.98		9.98
TX-HDL-21	McAllen 2.4 NE	9.71		9.71
TX-HDL-32	Linn 8.4 WNW	8.39		8.39
TX-HDL-5	La Joya 11.1 N	7.44		7.44
TX-HDL-6	Alamo 1.5 NNE	1.97	4.57	6.54
TX-HDL-14	La Joya 0.6 W	5.56		5.56
TX-HDL-36	McAllen 1.4 NNE	3.00		3.00

28 Stations with 593 Reports over 28 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-CMR-94	Brownsville 12.6 E	15.39		15.39
TX-CMR-13	Brownsville 2.2 W	11.12	3.81	14.93
TX-CMR-1	Rancho Viejo 0.7 E	14.25		14.25
TX-CMR-8	Brownsville 6.4 SE	14.13		14.13
TX-CMR-21	Los Fresnos 0.3 NE	13.22		13.22
TX-CMR-61	Brownsville 6.4 WNW	13.00		13.00
TX-CMR-15	Brownsville 4.9 NW	12.99		12.99
TX-CMR-16	Brownsville 3.5 N	12.80		12.80
TX-CMR-90	Brownsville 1.5 WNW	12.73		12.73
TX-CMR-91	Brownsville 2.9 NNE	12.70		12.70
TX-CMR-6	Brownsville 1.0 N	12.41		12.41
TX-CMR-50	Brownsville 5.0 NW	12.29		12.29
TX-CMR-89	Brownsville 1.7 NNE	11.87		11.87
TX-CMR-43	Brownsville 4.1 ENE	9.64	2.07	11.71
TX-CMR-84	Brownsville 2.2 WNW	7.37	4.20	11.57
TX-CMR-51	Brownsville 0.1 SSE	11.54		11.54
TX-CMR-35	Rio Hondo 9.4 NE	11.11		11.11
TX-CMR-58	Laguna Vista 0.3 N	11.05		11.05
TX-CMR-92	San Benito 8.7 ENE	5.57	5.39	10.96
TX-CMR-17	Brownsville 4.1 E	9.95		9.95
TX-CMR-31	Brownsville 7.0 NW	9.39		9.39
TX-CMR-93	Harlingen 4.2 W	8.82		8.82
TX-CMR-70	San Benito 0.6 SSE	8.50		8.50
TX-CMR-12	Harlingen 2.6 ESE	7.53	0.45	7.98
TX-CMR-56	Los Fresnos 0.8 SSE	4.50	3.29	7.79
TX-CMR-85	Harlingen 0.4 N	7.18		7.18
TX-CMR-87	Harlingen 3.1 SSW	6.60		6.60
TX-CMR-36	Harlingen 4.7 WSW	6.11	0.17	6.28

Here are selected rainfall totals for Cameron and Hidalgo County, courtesy of the Community Collaborate Rain, Hail, and Snow (CoCoRaHS) network (through 9 AM September 29th). This afternoon's rain in Cameron and Willacy will surely add to these totals in some locations.

At the three airports that serve the RGV, (as well as Cameron County Airport near Bayview which hit jackpot on Saturday), unofficial September totals as of this morning were the following:

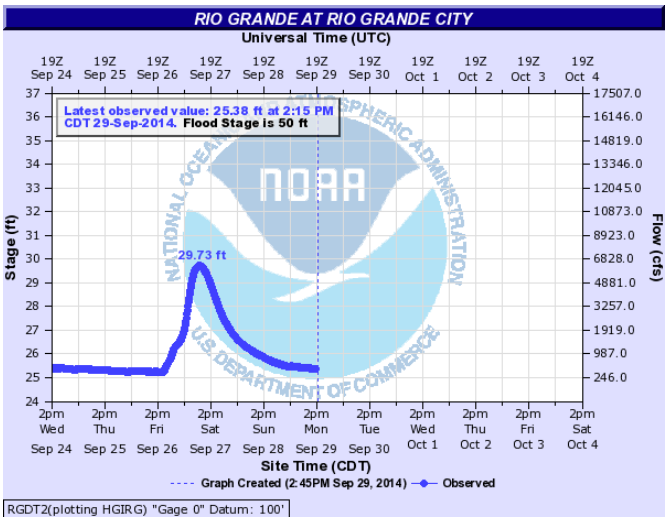
- **Brownsville/SPI:** 10.34, or 4.42 above the total monthly average of 5.92 inches
- **Harlingen/VIA:** 8.80, or 3.52 above the total monthly average of 5.22 inches
- **McAllen/Miller:** 11.23 inches, or 6.76 above the total monthly average of 4.47 inches
- **Bayview/Cameron County:** 10.96 inches (estimated 5 inches above average)

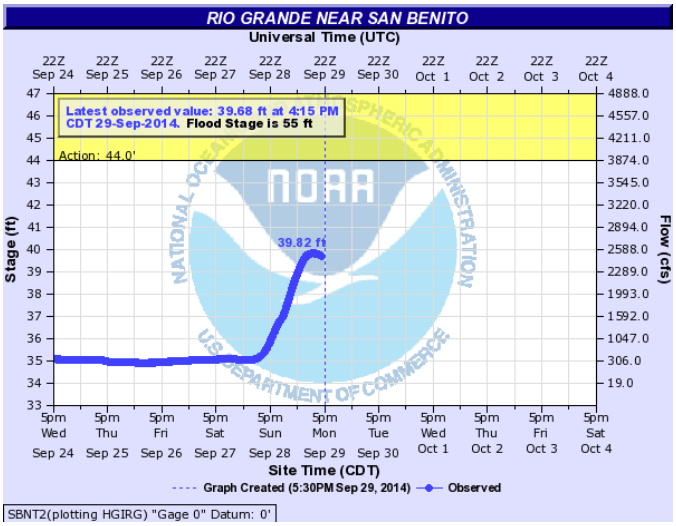
What Does This Mean for the Drought?

In the short and medium term, conditions have improved to where there is no longer a drought condition; in fact, medium term standardized precipitation index values, which can be used to combine soil moisture and water storage surpluses and deficits, are in the "severe to exceptional ***wetness*** " category, which is quite a switch from six weeks ago. It's always amazing how targeted, *tropical rain* (i.e. from a warm atmospheric process rather than the typical spring/late fall "melting hail" type process) and turn desert brown into rainforest green so quickly here in the RGV. But that's exactly what happened, so far. Despite the bounty of rain this September, we expect the 48-month period from October 2010 to September 2014 (data available in two weeks) to only rise slightly above the prior all-time driest similar 48 month period, dating back to the turn of the 20th century. Bottom line? We still need more - much more - rainfall to fully recover in the long term. A winter El Nino could help (see this article), but more months like this are needed with regularity (short of a slow moving tropical storm or hurricane).

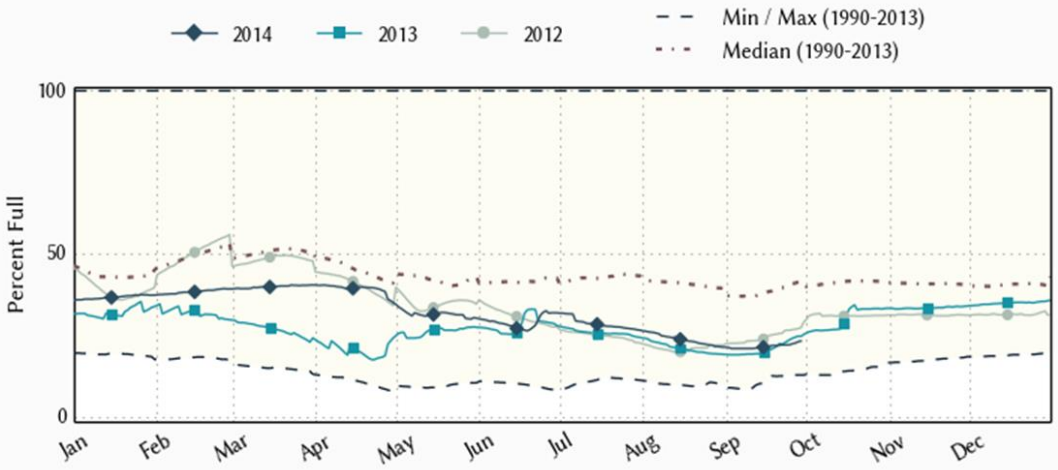
Falcon Dam: Low and Slow (Rise)

The locally heavy rainfall "perked up" the Rio Grande and Arroyo Colorado (below), but Falcon has only seen a minimal rise (Texas Share) from its summer lows. In fact, levels remain below those of autumn 2013, and short of a boost of tropical moisture from the Eastern Pacific in October, the levels are likely to stay below those of 2013 through November, at least.





Falcon Reservoir is 23.4% full as of 2014-09-29



	Date	Percent Full	Water Level (ft)	Height Above Conservation Pool (ft)	Reservoir Storage (acre-ft)	Conservation Storage (acre-ft)	Conservation Capacity (acre-ft)	Surface Area (acres)
Today	2014-09-29	23.4	268.99	-32.11	739,085	362,739	1,551,007	37,536
Yesterday	2014-09-28	23.2	268.84	-32.26	733,876	360,182	1,551,007	37,368
2 days ago	2014-09-27	22.8	268.49	-32.61	721,823	354,266	1,551,007	36,977
1 week ago	2014-09-22	22.2	268.13	-32.97	709,135	343,800	1,551,007	36,567
1 month ago	2014-08-29	21.7	267.84	-33.26	698,749	335,975	1,551,007	36,232
3 months ago	2014-06-29	32.0	272.79	-28.31	888,597	496,342	1,551,007	41,952
6 months ago	2014-03-29	40.4	276.93	-24.17	1,077,359	626,741	1,551,007	47,058
1 year ago	2013-09-29	24.8	266.05	-35.05	636,509	384,373	1,551,007	34,236

The End of the (Texas) Atlantic Tropical Season for 2014?

It's certainly looking that way. The opportunity for Texas typically slips away in early October, and there's nothing on the horizon in the near future. Once that first vigorous "windows-opening" front surges through the state, the end will be here. A good read on the this topic can be found here. Stay tuned!